

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
20 January 2005 (20.01.2005)

PCT

(10) International Publication Number  
**WO 2005/005776 A1**

(51) International Patent Classification<sup>7</sup>: **E21B 43/34, B01D 17/02**

(21) International Application Number:  
**PCT/NO2004/000212**

(22) International Filing Date: **8 July 2004 (08.07.2004)**

(25) Filing Language: **English**

(26) Publication Language: **English**

(30) Priority Data:  
**20033152 9 July 2003 (09.07.2003) NO**

(71) Applicant (for all designated States except US): **NORSK HYDRO ASA [NO/NO]; N-0240 Oslo (NO).**

(72) Inventors; and

(75) Inventors/Applicants (for US only): **GRAMME, Per [NO/NO]; Steinringen 12, N-3931 Porsgrunn (NO). LIE, Gunnar, Hannibal [NO/NO]; Korpeliveien 13, N-3928 Porsgrunn (NO).**

(74) Agent: **HOFSETH, Svein; Norsk Hydro ASA, N-0240 Oslo (NO).**

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

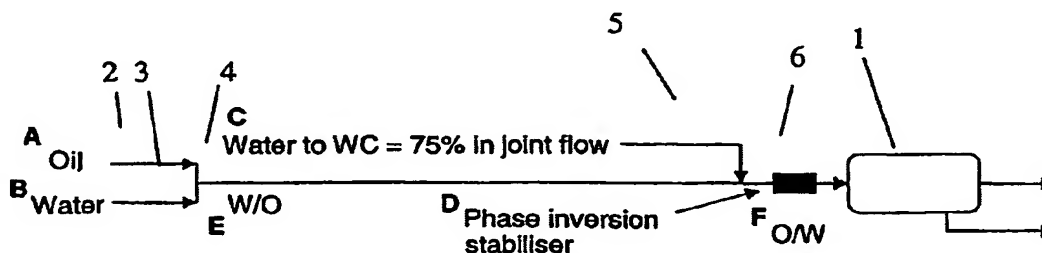
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **A METHOD AND DEVICE FOR SEPARATION OF A FLUID, IN PARTICULAR OIL, GAS AND WATER**



(57) Abstract: A method and a device for separation, in particular oil, gas and water, in connection with the extraction of such a fluid from formations under the surface of the earth or the sea bed. The fluid is transported in a supply pipe or transport pipe (4) to a separator (1) in the form of a tubular separator body, a gravitation tank or similar. The separated components, water and oil, are passed out of the separator separately via outlet pipes (not shown). The fluid upstream of the separator (1) is subjected to shear forces so that the drops in the supply flow are torn up to form drops that are so small that the interface generally becomes new and "uncontaminated" by surfactants. The shear forces are supplied by means of a phase inversion device (6) in the form of a valve or similar. Water can expediently be added to the fluid upstream of the phase inversion device (6) to achieve the desired phase inversion.